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EXAMINER				
PAUL, DISLER				
ART UNIT		PAPER NUMBER		
2615				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

# Office Action Summary

**Application No.**

10/579,421

**Applicant(s)**

SCHEUCHER, HEIMO

**Examiner**

DISLER PAUL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/08)  
Paper No(s)/Mail Date 5/11/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION*****Response to Arguments***

The examiner's objection in last office action for allowability subject matter has been further considered and a new office action will be mailed as set forth below with a new ground of rejection being made in view of the objected claim.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2,4, 6, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,815,746 B2) and further in view of Sugiyama et al. (US 6,763,120 B2).

Re claim 1, Suzuki et al. disclose of the electro-acoustic transducer, comprising: sound-generating means; and a circuit unit, comprising a circuit substrate and at least one circuit component of a signal-processing circuit, the circuit component is being mounted on the circuit substrate wherein the sound-generating means define an interior space which interior is accessible from outside the sound-generating means when the transducer is being manufactured and before the circuit unit is fitted, and wherein the at least one circuit component is in positioned within the interior space in defined by the sound-generating means and forms a communication circuit of a communication partner

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device for contact communication (fig.5-6; col.1 line 50-65; col.16 line 60-67/wireless communication with circuit/substrate transducer).

However, Suzuki et al. fail to disclose of the arrangement of the transducer and specifically wherein the sound generating means arranged in annular form. But, Sugiyama et al. disclose of the system wherein the sound generating means arranged in annular form (fig.1-3; col.4 line 39-50) for purpose of being able to easily secure on the circuit board. Thus, taking the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Suzuki et al. with the sound generating means arranged in annular form for purpose of being able to easily secure on the circuit board.

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Re claim 2, the electro-acoustic transducer as claimed in claim 1, wherein the at least one circuit component comprises only a single circuit component formed by an integrated circuit connected to the circuit substrate, the integrated circuit forming the communication circuit (col.2 line 5-8/may be mounted as single package).

4. The electro-acoustic transducer as claimed in claim 1, wherein the sound-generating means comprises a diaphragm, and wherein contact terminals each in the form of a sector of a substantially circular annulus, are provided on a face of the circuit substrate facing away from the diaphragm (fig.7a-b; col.8 line 10-40). However, the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, fail to disclose of the specific wherein the contact terminals being four. But, official notice is taken the limitation

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wherein having the specific contact terminals being four is simply the inventor's preference, thus it would have been obvious for one of the ordinary skill in the art to have modify the specific contact terminals being four for facilitating the speaker to the assembly circuit board.

Re claim 6, the electro-acoustic transducer as claimed in claim 1 with the housing, However, the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, fail to disclose of the wherein the transducer comprises a cup-shaped housing, having a height in a direction parallel to an axis of the transducer between 2 and 5 mm and a diameter perpendicular to the direction of the transducer axis is between 6 and 20 mm. However, official notice is taken the concept of designing a housing wherein the transducer comprises a cup-shaped housing, having a height in a direction parallel to an axis of the transducer between 2 and 5 mm and a diameter perpendicular to the direction of the transducer axis is between 6 and 20 mm is simply the inventor's preference, thus, taking the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have incorporated the concept of designing a housing wherein the transducer comprises a cup-shaped housing, having a height in a direction parallel to an axis of the transducer between 2 and 5 mm and a diameter perpendicular to the direction of the transducer axis is between 6 and 20 mm for providing better spacing to enclose the integrated circuit.

Re claim 10, Suzuki disclose of the electro-acoustic transducer, comprising: a sound-generator defining an interior space, the sound generator a circuit unit, at least a

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portion of which is configured to be insertable within an inner perimeter of the interior space defined by the sound-generator, the circuit unit comprising a substrate and at least one circuit component mounted on the substrate, wherein the at least one circuit component forms a communication circuit of a communication partner device for contactless communication (fig.5-6; col.1 line 50-65; col.16 line 60-67/wireless communication with circuit/substrate transducer).

However, Suzuki fail to disclose of the specific wherein the sound-generator comprises a diaphragm, a moving coil in contact with the diaphragm, and a magnet system arranged around an outer perimeter of the interior space. But, Sugiyama et al. disclose of the speaker wherein specifically having sound-generator comprises a diaphragm, a moving coil in contact with the diaphragm, and a magnet system arranged around an outer perimeter of the interior space (fig.2,4; col.4 line 5-15; & line 38-45) for purpose of improving the sound characteristic of the speaker. thus, taking the combined teaching of Suzuki and Sugiyama et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Suzuki with the sound-generator comprises a diaphragm, a moving coil in contact with the diaphragm, and a magnet system arranged around an outer perimeter of the interior space for purpose of improving the sound characteristic of the speaker.

Re claim 11, the transducer of claim 10, however, the combined teaching of Suzuki and Sugiyama et al. as a whole, fail to disclose of wherein the substrate comprises a plurality of contacts on an outer face, facing away from the diaphragm. But, Sugiyama disclose of a system wherein the substrate comprises a plurality of contacts on an outer face, facing away from the diaphragm (fig.4 wt (24,22); col.4 line 38-

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45/substrate speaker with circuit contact) for enabling a simplified manufacturing of the speaker. Thus, it would have been obvious for one of the ordinary skill in the art to have modify the combined teaching of Suzuki and Sugiyama et al. as a whole, with the substrate comprises a plurality of contacts on an outer face, facing away from the diaphragm for enabling a simplified manufacturing of the speaker.

Re claim 12, the transducer of claim 11 with the circuitry, However, the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, fail to disclose of wherein the circuit unit further comprises an encapsulation portion, the at least one circuit component being housed within the encapsulation portion (fig.5-6/circuitry/enclose/encapsulated))

13. The transducer of claim 12, wherein the circuit unit further comprises at least one contact connected to the encapsulation portion, the at least one contact being electrically connected to at least one contact of the moving coil (fig.22-23; col.15 line 15-30/conductive wire integrated with circuits)

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,815,746 B2) and further in view of Sugiyama et al. (US 6,763,120 B2) and further in view of Bleim et al. (US 6,370,257 B1).

Re claim 5, the electro-acoustic transducer as claimed in claim 1, however, the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, fail to disclose of the wherein the circuit unit is removable without the use of a separate tool. However, Bleim et al. disclose of a system wherein the circuit unit is removable without the use of a separate tool (col.3 line 45-50; col.8 line 1—24) for the purpose of avoiding the damage of the device during installation. Thus, taking the combined teaching of Suzuki et al. and Sugiyama et al. and Bleim et al. as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have modify the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, by incorporating the circuit unit is removable without the use of a separate tool for the purpose of avoiding the damage of the device during installation.

3. Claims 3,7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,815,746 B2) and further in view of Sugiyama et al. (US 6,763,120 B2) and further in view of (Berndtsson (7,0004,400 B2) or Kaneda et al. (US 7,212,647 B2)).

Re claim 3, while, the combined teaching of Suzuki et al. and Sugiyama et al. as a whole, disclose of the integrated at least one circuit component and moving coil for the sound generating means (fig.22-23/conductive coils); however, they fail to disclose of the specific wherein the moving-coil of the sound generating means and wherein the moving coil is used, in addition as a contactless transmission means of the communication device. But, (Berndtsson or kaneda et al.) disclose of a coil with an integrated device system with similar concept wherein moving coil is used, in addition as



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a contactless transmission means of the communication device ( (Bemdt, col.2 line 47-60; fig.3; col.1 line 50-65) or (kaneda, fig.6-8; col.4 line 35-60))) for purpose of reducing the speed between the controlling unit and the integrated circuit and reducing occurrence of strange noise cause by vibration. Thus, taking the combined teaching of Suzuki et al. and Sugiyama et al. and ( Bemdtsson or kaneda )as a whole, it would have been obvious for one of the ordinary skill in the art to have modify combined teaching of Suzuki et al. and Sugiyama et al. as a whole, with the coil with an integrated device system with similar concept wherein moving coil is used, in addition as a contactless transmission means of the communication device for purpose of reducing the speed between the controlling unit and the integrated circuit and reducing occurrence of strange noise cause by vibration.

While, the combined teaching of Suzuki et al. and Sugiyama et al. and ( Bemdtsson or kaneda ) as a whole, disclose of the above with the circuitry being encapsulated (fig.5-6; col. 8 line 30-55, with the contactless communication, However, they fail to disclose of the specific wherein the circuit is embedded in a plastics encapsulation. However, official notice is taken the concept of having the specific wherein the circuit is embedded in a plastics encapsulation is simply the inventor's preference, thus it would have been obvious for have the circuit with is embedded in a plastics encapsulation for having multi-function of the device.

Re claim 7, Suzuki disclose of the electro-acoustic transducer, comprising: a sound-generator and defining an interior space, the sound- generator; and a circuit unit

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comprising a circuit substrate and at least one circuit component of a signal-processing circuit, the at least one circuit component being mounted on the circuit substrate, wherein the interior space is accessible from outside the sound-generator when the transducer is being manufactured and before the circuit unit is included, and wherein the at least one circuit component is positioned within the interior space and forms a communication circuit of a communication partner device for contactless communication, (fig.5-6; col.1 line 50-65; col.16 line 60-67/wireless communication with circuit/substrate transducer), However, Suzuki fail to disclose of the generating means comprising a moving coil and specifically the moving coil being used for the contactless communication. But,(Bemdtsson or kaneda et al.) disclose of a coil with an integrated device system with similar concept wherein moving coil is used, in addition as a contactless transmission means of the communication device ((Bemdt, col.2 line 47-60; fig.3; col.1 line 50-65) or (kaneda, fig.6-8; col.4 line 35-60))) for purpose of reducing the speed between the controlling unit and the integrated circuit and reducing occurrence of strange noise cause by vibration. Thus, taking the combined teaching of Suzuki et al. and (Bemdtsson or kaneda )as a whole, it would have been obvious for one of the ordinary skill in the art to have modify combined teaching of Suzuki et al. with the coil with an integrated device system with similar concept wherein moving coil is used, in addition as a contactless transmission means of the communication device for purpose of reducing the speed between the controlling unit and the integrated circuit and reducing occurrence of strange noise cause by vibration.

While, the combined teaching of Suzuki et al. and (Bemdtsson or kaneda) as a whole, disclose of the above, with sound generating means, However, they fail to

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disclose of the specific wherein the sound generating being an annular form and the at least one contact being connected to a moving-coil contact of the moving coil. But, Sugiyama et al. disclose of the system wherein the sound generating means arranged in annular form and the at least one contact being connected to a moving-coil contact of the moving coil (fig.1-3; col.4 line 39-50) for purpose of being able to easily secure on the circuit board. Thus, taking the combined teaching of Suzuki et al. and (Bemdtsson or kaneda) and Sugiyama et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Suzuki et al. with the sound generating means arranged in annular form for purpose of being able to easily secure on the circuit board.

While, the combined teaching of Suzuki et al. and Sugiyama et al. and (Bemdtsson or kaneda ) as a whole, disclose of the above, with the contactless communication and circuitry being encapsulated (fig.5-6)/enclosed/covered)), However, they fail to disclose of the specific wherein the circuit is embedded in a plastics encapsulation. However, official notice is taken the concept of having the specific wherein the circuit is embedded in a plastics encapsulation is simply the inventor's preference, thus it would have been obvious for have the circuit with is embedded in a plastics encapsulation for having multi-function of the device.

RE claim 8, the transducer of claim 7, wherein the annular form of the sound-generator comprises one of a circle (fig.1-3).

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Re claim 9, the transducer of claim 7, However, the combined teaching of Suzuki et al. and Sugiyama et al. and (Bemdtsson or kaneda ) as a whole, fail to disclose of the wherein the annular form of the sound-generator comprises one of a square or a rectangle . However, official notice is taken the concept of having the specific wherein the sound-generator comprises one of a square or a rectangle is simply the inventor's preference, thus it would have been obvious for have the circuit with sound-generator comprises one of a square or a rectangle for producing audible sound.

4. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 6,815,746 B2) and further in view of Sugiyama et al. (US 6,763,120 B2) .

Re claim 14, the transducer of claim 13 with the circular sound generating means, However, the combined teaching of Suzuki and Sugiyama et al. as a whole, fail to disclose of the wherein the specific wherein the inner periphery of the interior space defined by the sound-generator circuit unit is substantially circular. However, official notice is taken the concept of having the specific wherein the inner periphery of the interior space defined by the sound-generator circuit unit is substantially circular is simply the inventor's preference, thus it would have been obvious for have the circuit with the inner periphery of the interior space defined by the sound-generator circuit unit is substantially circular for producing audible sound.

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RE claim 15, has been analyzed and rejected with respect to claim 14 above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DISLER PAUL whose telephone number is (571)270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./  
Examiner, Art Unit 2615

Art Unit: 2615

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2615